

1 What is claimed is:

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3 1. A method of data sharing and linkage between Internet Protocol (IP)
4 telephony Internet-accessible devices, comprising:

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6 a first user of a first Internet-accessible device initiating a data transfer over a
7 first communications link between the first Internet-accessible device,
8 coupled to a first telephony device and usable by the first user, and a second
9 Internet-accessible device, coupled to a second telephony device and usable
10 by a second user;

11

12 establishing a second communications link between a first transmit/receive
13 device of the first telephony device and a second transmit/receive device of
14 the second telephony device; and

15

16 exchanging a plurality of data packets between the first and second Internet-
17 accessible devices via the second communications link.

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19 2. The method of claim 1, prior to the first user of the first Internet-
20 accessible device initiating the data transfer, further comprising:

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22 the first user enabling a first link feature of the first Internet-accessible device
23 and the second user enabling a second link feature of the second Internet-
24 accessible device.

25

26 3. The method of claim 1, wherein at least one of the first and second
27 Internet-accessible devices is a set-top box.

28

1 4. The method of claim 1, wherein the telephony system is a telephone.

2

3 5. The method of claim 1, wherein the first communications link is a
4 telephone link via the Internet.

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6 6. The method of claim 1, wherein the first communications link and the
7 second communications link are the same.

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9 7. The method of claim 1, wherein at least one of the transmit/receive
10 devices are able to send and receive voice and data information
11 simultaneously.

12

13 8. The method of claim 7, wherein establishing the first communications
14 link between the first transmit/receive device of the first telephony device and
15 the second transmit/receive device of the second telephony device comprises:

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17 the first transmit/receive device switching into an analog circuit of the first
18 telephony device and sending a synchronization sequence for receipt by the
19 second transmit/receive device of the second telephony device; and

20

21 the second telephony device detecting the synchronization sequence, muting
22 a handset of the second telephony device, and coupling a plurality of
23 telephone signals of the second telephony device to the second
24 transmit/receive device of the second telephony device.

25

26 9. The method of claim 8, wherein at least one of the first and the second
27 telephony devices are telephones.

28

1 10. The method of claim 1, wherein a format and a content of the plurality
2 of data packets are defined by one or more applications running at one or
3 more of the first and second Internet-accessible devices.

4

5 11. The method of claim 1, wherein during an exchange of the plurality of
6 data packets between the first and second Internet-accessible devices, further
7 comprising:

8

9 communicating a message that the exchange of the plurality of data packets
10 is in progress to the first and second users on the first and second Internet-
11 accessible devices.

12

13 12. A method for establishing a data link between users of set-top boxes
14 and sharing data through the data link, comprising:

15

16 establishing contact between the users of a plurality of set-top boxes through
17 a first transmission media;

18

19 initiating a data transfer between the plurality of set-top boxes using a second
20 transmission media;

21

22 exchanging identification information between the plurality of set-top boxes
23 using a third transmission media;

24

25 using the identification information to establish a data link between the
26 plurality of set-top boxes using a fourth transmission media;

27

28 exchanging a plurality of data packets between the plurality of set-top boxes
29 over the data link; and

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2 maintaining current identification information between the plurality of set-top
3 boxes to allow the data link to be continuously accessible by the plurality of
4 set-top boxes.

5

6 13. The method of claim 12, wherein the first transmission media includes
7 a plurality of telephony devices coupled to the set-top boxes.

8

9 14. The method of claim 13, wherein one or more of the telephony devices
10 of the first transmission media is a telephone coupled to a set-top box of the
11 plurality of set-top boxes.

12

13 15. The method of claim 13, wherein a first telephony device of the plurality
14 of telephony devices coupled to a first set-top box is able to communicate with
15 the plurality of telephony devices coupled to the plurality of set-top boxes
16 using a Public Switched Telephone Network contained within the first
17 transmission media.

18

19 16. The method of claim 15, wherein the first telephony device is a
20 telephone.

21

22 17. The method of claim 13, wherein a first telephony device coupled to a
23 first set-top box is operable to communicate with the plurality of telephony
24 devices coupled to the plurality of set-top boxes using the Internet.

25

26 18. The method of claim 12, wherein the second transmission media is the
27 first transmission media.

28

1 19. The method of claim 12, wherein the third transmission media is the
2 second transmission media.

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4 20. The method of claim 12, wherein the second and the third transmission
5 medium are the first transmission media.

6

7 21. The method of claim 12, wherein the second, third and fourth
8 transmission medium are the first transmission media.

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10 22. The method of claim 12, wherein the second transmission media is the
11 Internet.

12

13 23. The method of claim 12, wherein the second transmission media is a
14 Public Switched Telephone Network.

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16 24. The method of claim 13, wherein the plurality of telephony devices is a
17 plurality of telephones.

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19 25. The method of claim 12, wherein at least one of the plurality of set-top
20 boxes contains a transmit/receive device for the transmission and reception of
21 the plurality of data packets.

22

23 26. The method of claim 25, wherein establishing contact between the
24 users of a plurality of set-top boxes through a first transmission media
25 comprises establishing a communication link between a first transmit/receive
26 device of a first set-top box and a second transmit/receive device of a second
27 set-top box, further comprising:

28

1 the first transmit/receive device switching into an analog circuit of the first
2 telephony device and sending a synchronization sequence for receipt by the
3 second transmit/receive device of the second telephony device; and

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5 the second telephony device detecting the synchronization sequence, muting
6 a handset of the second telephony device, and coupling a plurality of
7 telephone signals of the second telephony device to the second
8 transmit/receive device of the second telephony device.

9

10 27. The method of claim 12, wherein the data transfer initiated by a first
11 user of the users of the plurality of set-top boxes occupies the first
12 transmission media used to establish contact between the plurality of users,
13 thereby temporarily halting a voice communication between the first user and
14 the plurality of users.

15

16 28. The method of claim 12, wherein an amount and a type of identification
17 information exchanged varies depending upon a security policy defined for the
18 users of the plurality of set-top boxes.

19

20 29. The method of claim 12, wherein the identification information
21 exchanged includes acknowledgement information.

22

23 30. The method of claim 12, wherein establishing the data link includes
24 exchanging acknowledgement information between the plurality of set-top
25 boxes.

26

27 31. The method of claim 12, wherein the data transmitted after establishing
28 the data link includes a plurality of voice packets, thereby bypassing a public
29 switched telephone network.

1
2 32. The method of claim 12, wherein the data transmitted after the
3 establishment of the data link over the data link includes one or more of
4 Internet Protocol addresses, Media Access Control (MAC) addresses, e-mail
5 addresses, mailing addresses, television viewing preferences, television
6 viewing history, photographic archives, personal or family activity schedules,
7 address books, websites, audio files, video files, and travel itineraries.
8

9 33. The method of claim 12, wherein each set-top box of the plurality of
10 set-top boxes transmits notification of a change in its data link availability to
11 the plurality of set-top boxes to enable the plurality of set-top boxes to access
12 the data link between said plurality of set-top boxes.
13

14 34. A system for the initiation, establishment and maintenance of a data
15 link between a plurality of Internet-accessible devices, comprising:
16

17 a plurality of telephony devices suitable for voice grade communications;
18
19 a plurality of Internet-accessible devices each having a first interface to the
20 plurality of telephony devices and a second interface to a corresponding
21 plurality of transmission media;
22

23 a first Internet-accessible device of the plurality of Internet-accessible devices
24 having the first interface to a first telephony device of the plurality of telephony
25 devices and the second interface to the plurality of transmission media; and
26

27 a plurality of transmission paths linking the plurality of Internet-accessible
28 devices to the plurality of telephony devices.
29

1 35. The structure of claim 34, wherein one or more Internet-accessible
2 devices of the plurality of Internet-accessible devices is a set-top box.

3

4 36. The system of claim 34, wherein the first telephony device is a
5 telephone.

6

7 37. The system of claim 34, wherein the first Internet-accessible device is
8 operable for data communication as well as voice communication.

9

10 38. The system of claim 34, wherein the plurality of transmission paths
11 includes one or more of an Internet, a Public Switched Telephone Network, a
12 microwave communication system, an optical communication system, a cable
13 communication system, and a radio-frequency communication system.

14

15 39. The structure of claim 35, wherein a transmission path of the plurality
16 of transmission paths includes a first cable headend coupled to a first
17 input/output terminal of the first set-top box, and a second cable headend
18 coupled to a plurality of input/output terminals of the plurality of set-top boxes.

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20 40. The structure of claim 39, wherein the first and second cable headends
21 are the same.

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23 41. The structure of claim 39, wherein a transmission path of the plurality
24 of transmission paths includes an Internet coupled to a first input/output
25 terminal of the first cable headend and coupled to a first input/output terminal
26 of the second cable headend.

27

28 42. The system of claim 39, wherein a transmission path of the plurality of
29 transmission paths includes a public switched telephone system coupled to a

- 1 first input/output terminal of the first cable headend and coupled to a first
- 2 input/output terminal of the second cable headend.
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